

REMARKS

§103 Rejections

The Office Action indicates that all pending claims stand rejected as being obvious over Onitsuka (U.S. Pat. App. Pub. No. 2002/0004980). Claim 11 is the sole independent claim and is directed to a method for gluing electronic components to the surface of a circuit substrate. With the claimed method, a gripper grips an electronic component to be glued to the surface of the substrate, and places the component on the substrate. *E.g.*, *Spec.*, p. 8, ln. 12 – p. 9, ln. 11; Figure 1.

Applicant has amended claim 11 to recite that after placing the component on the substrate, the gripper “[releases] the circuit component and [is raised] directly above the circuit component along an axis that is substantially perpendicular to the surface of the circuit substrate.” While the gripper is directly above the circuit component, the gripper is “[turned] about the axis ... [and moved] ... along the axis toward the circuit component to the target distance a second time.” Onitsuka, which discloses a device for mounting electronic components onto printed circuit boards (PCBs), does not teach or suggest these limitations of amended claim 11 because the Onitsuka device does not move or position a gripper as claimed.

The device in Onitsuka has 4 different stations, each of which performs a different function. *Onitsuka*, p. 2, ¶¶[0032-0035]; Figure 1. One station in particular – the mounting station 30 – is responsible for mounting an electrical component onto a PCB (1). As seen in Figure 3, the mounting station includes a rotary head (38) having a plurality of grippers (39a, 39b) disposed at its edges. The rotary head turns in a plane that is substantially parallel to the underlying PCB. As the rotary head turns, it alternately rotates the grippers (39a, 39b) towards and away from the PCB so that each gripper is alternately positioned to mount an electronic component to PCB. *Onitsuka*, p. 4, ¶¶[0066-0073]; Figure 3.

Onitsuka does not teach or suggest (that after a gripper releases its component), "raising the gripper *directly above* the circuit component along an axis that is substantially perpendicular to the surface of the circuit substrate...[and then]...turning the gripper about the axis." Instead, after each gripper releases its component, the rotary head rotates the grippers away from the mounted component and in a plane that is parallel to the PCB. Rotating the grippers away from the mounted components would necessarily move the grippers away from the perpendicular axis and away from being positioned directly above the circuit component. Since Onitsuka moves the grippers away from the axis and the component, Onitsuka cannot teach or suggest, "turning the gripper about the [perpendicular] axis." Nor can Onitsuka teach or suggest, "moving the gripper along the axis toward the circuit component to the target distance a second time." Indeed, the structure and function of the disclosed rotary disk moves the Onitsuka grippers away from a position in which they could perform the claimed steps. Therefore, Onitsuka does not render claim 11 or any of its dependent claims obvious.

§112 ¶1 Rejections

The Office Action also alleges that the specification does not enable claim 20. In response, Applicant has amended claim 20, without adding new matter, to address the Examiner's stated concerns. Specifically, the amendments delete language the Examiner notes is confusing, and clarifies language that defines how the gripper holds the component being mounted to the PCB. Particularly, the gripper has an abutment surface that abuts the opposing side edges of the component (e.g., see reference number 6 in Figure 2A). *Spec.*, p. 8, ln. 12 – p. 9, ln. 2. Amended claim 20 is fully enabled such that, given the specification and drawings, anyone skilled in the art would easily be able to construct an apparatus that performs according to the claimed method. In light of the amendments and remarks, Applicant believes that the §112 ¶1 rejection should be withdrawn.

§112 ¶2 Rejections

Finally, the office Action indicates that claims 11-21 stand rejected under §112 ¶2 as allegedly being indefinite. The Examiner particularly asserts that the claim 11 phrase "target distance" is unclear because there is no explicit definition of what a "target distance" is. However, the specification explicitly and unambiguously defines a target distance in several parts of the specification. Specifically, the "target distance" of claim 11 is the point at which a counteracting force opposing the gripper as it moves toward the substrate meets a predefined value. *E.g., Spec., p. 5, ll. 12-17.* Applicant respectfully submits that the phrase "target distance" is adequately clear given the specification and drawings, and therefore, requests that the Examiner withdraw the rejection.

In light of the foregoing amendments and their accompanying remarks, Applicant requests that all pending claims be allowed.

Respectfully submitted,

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